Safety and Environmental Management

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Safety & Environmental Management

- Environmental Management Systems
- Environmental Functional Reviews
- Other Environmental Projects
- General Environmental Trends

Environmental Management Systems

- Required by EO 13148 (12/31/05)
- Very similar to QMS, VPP, et al
- Approximates ISO 14001
- Three testbed facilities
  - GRC, JSC, SSC + WSTF
- Presentation to EMB, CIC later this year

Environmental Management Systems

General EMS Elements

- Environmental Policy
- Planning
  - Legal & other Requirements
  - Objectives & Targets
  - Environmental Management Program
- Implementation & Operation
  - Structure & Responsibility
  - Training, Awareness & Competence
  - Communication
  - Documentation & Document & Record Control
  - Operational Controls
  - Emergency Preparedness & Respo
- Checking & Corrective Action
  - Monitoring & Performance Measurement
  - Nonconformance & Corrective & Preventive Action
  - Auditing
- Management Review

Integration

Environmental Functional Reviews

- Models an EPA multimedia audit
- Uses USA-CERL Protocols plus EMS Checklist
- Several potential crossovers provide data for safety consideration
  - Hazardous Materials & Wastes
  - Hazard Communication
  - Training Programs

EFR Insights for Safety

- **Training Delivery vs. Training Management**
  - Every Center ISO document says "Supervisor is responsible for deciding on training"
  - Does the supervisor have the tools they need to make these decisions?
- **What's in the Performance Plans?**

Other Environmental Projects

- Environmental Staffing Model
- Sustainable Design/Design for Maintainability (Code JX)
- Risk Management & NEPA
- Environmental Professional Training Matrix

Environmental Staffing

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NASA FACILITY ENVIRONMENTAL STAFFING MODEL

Summary Output of Estimated Staffing Requirements

Facility:	Sample
Scenario:	
Date:	3/21/01

Aggregate Staffing for Environmental Activities, FTEs

	Civil	Contractor	Total Staffing Requirement
Estimated Requirement	**12.3**	**10.9**	**23.1**
Current Levels	**7.0**	**8.0**	**15.0**
Difference	**-5.3**	**-2.9**	**-8.1**

FTE Equivalent Hours per Year: 1860

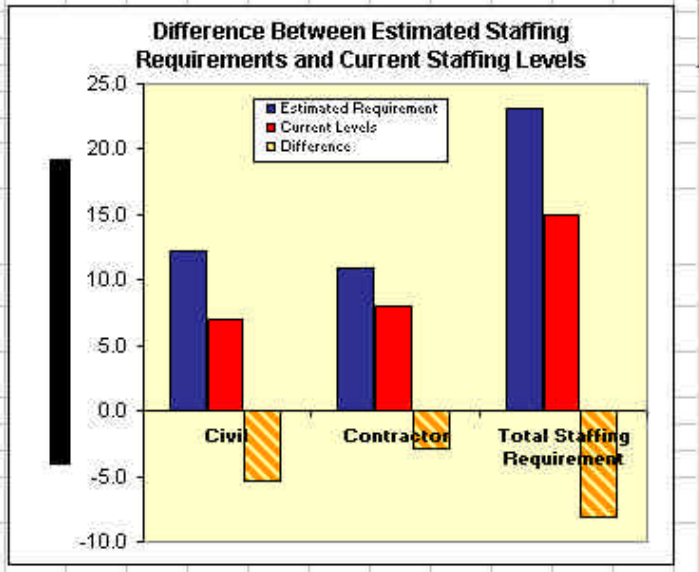
Estimated Staffing Requirements by Environmental "Pillar", FTEs

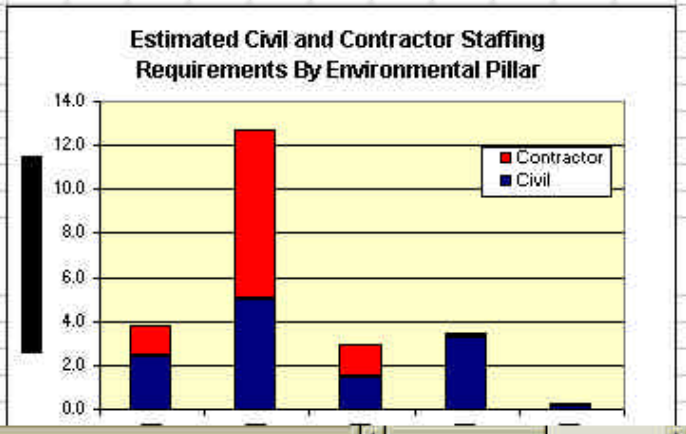
Pillar	Civil	Contractor	Total Staffing Requirement
Prevention	2.4	1.4	3.8
Compliance	5.0	7.7	12.7
Conservation	1.4	1.5	3.0
Restoration	3.3	0.2	3.5
Administration	0.1	0.1	0.3
Total	12.3	10.9	23.1

Estimated Staffing Requirements by Environmental Activity, FTEs

Environmental Activity	Civil	Contractor	Total Staffing Requirement
Solid Waste	0.0	0.3	0.4
NEPA	2.0	0.0	2.0
EPCRA, Spill Resp.	0.1	0.6	0.7
Storage Tanks	0.2	0.1	0.4
PCBs	0.0	0.6	0.6

Results / Instructions





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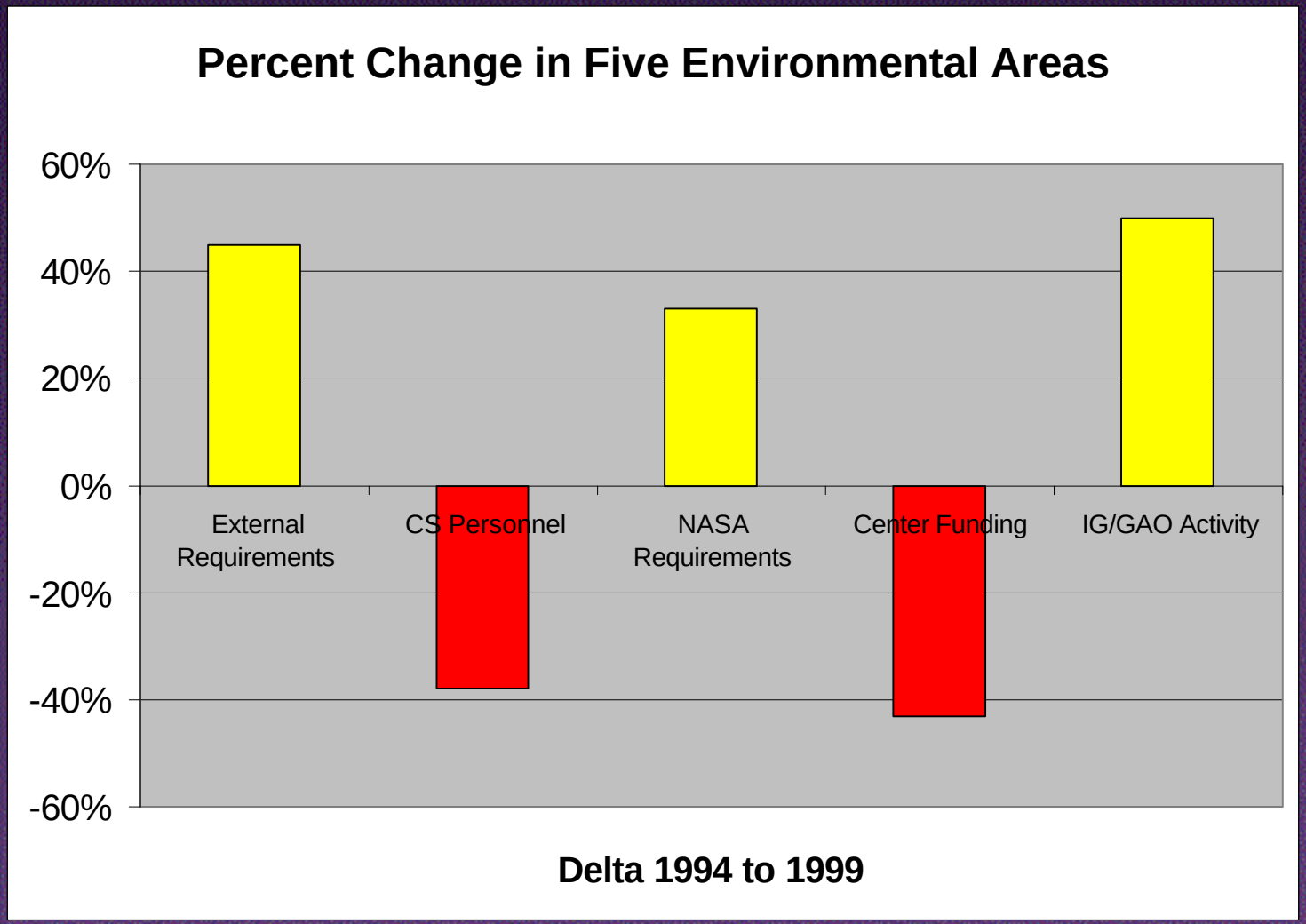
Environmental Staffing



Environmental Staffing

- Built a Model
  - external benchmarks
- Built a Business Case
  - 10-year change analysis
- Linked to External Audits
  - Federal, state, IG, et al
- Evaluation to Code A
- Reassessment through EFR

Other Environmental Projects

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General Environmental Trends

- Pollution Prevention
  - EPA is moving towards “source reduction”
  - Much more invasive than old “end of pipe” philosophies
  - Crossover benefit to safety, budget
- Threshold limits are dropping fast
  - Reporting limit for lead (Pb) just went from 10,000 to 100 lbs/yr

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